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that some kinds of serpents are harmguish between these two classes is universally a popular difficulty. Many persons imagine that all snakes are tion is erroneous, is proved by the exr of the black stake the world at v is by this time agreed, and yet a syman lately around me that in obliden I was undoubtedly mission for he bimself while hunting, seen his dog blitten by one of these is in the rose with evil results. The dog's head," said he, "swelled to an emermous size, and it was a week before he had fully recov-

## Bluck Snakes and Hog Noses Not Venomons.

it is not enough for me, however study not snakes in the woods, and live in the same room with them by day and by might, that I may know them sleeping and waking, as hables and adults just as the groom knows his horses. This I know black snakes, and this I know have, that the verdict of science as to their innoceance of vencion is just and true, without any possibility of mistake. For in the woods and at home, in answer and otherwise, alone and in the presence of others, they have a hundred times very offectively blitan me on hands, arms and elsewhere, drawing blo if from the panicure of every teath, without once causing swelling or sciences, of the hole of a fles or mosquito. If the Jerseyman told me the truth his black snake may indeed have been black but not of the kind we call "black snake" It was probably a dark colored ratitier, or a coppor head bedrafolded with swamp mud.

Many other harmless stakes also are grossly maligned, but none more than grossly maligned, but none more than the presence of the properties of course, the diminutive Elapidae of the extreme south, mentioned above.

Of rattle-snakes there are many species of mocasin and copper-head, but one of each. These all agree in certain points of character, shape and structure. One peculiarity they have in common, which no other American snake possesses, and that is the pit (Bothros), from which their family takes its name. This pit may be seen

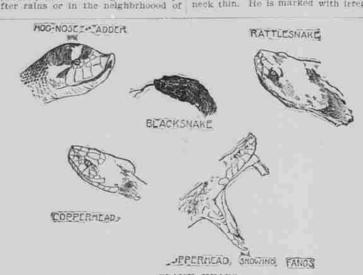


Rattlesnake Prepared to Striks.

the Hog-Nose, called also the sand-adthe Hog-Nose, called also the sand-ad-der, spreading adder, puffing adder, blauser, fit-headed adder, gray adder, etc. This snake I know personally, as I do the black snake I have caught with my naked hands between one hundred and fifty and two hundred hog-poses, have lived with them unin-terruptedly for the last four years, and can youth for them, as not only per-fectly knowent of versum, but as the most inoffensive of all the snakes I have met with. Under no circumstan-per any you induce them to bite. The most inoffensive of all the scakes I have met with. Under no circumstances can you induce them to bite. The most they will do is to hiss and ascume a threatening attitude, making sham strokes with the head from one side to the other. And yet persons will never that they have seen the bite, and cause serious sorieness and swelling in men as well as in animals. Such witnesses have been undoubtedly misterious to the snake they saw biting.

DEADLY SNAKES.

The confine curselves to the snakes of the contribution of the snakes of the confine curselves to the snakes of the contribution of the snakes of the confine curselves to the snakes of the contribution of the snakes of the confine curselves to the snakes of the confine curselves to the snakes of the contribution of the confine curselves to the snakes of the snakes of the confine curselves to the snakes of the confine curselves to the snakes of the snakes of the confine curselves to the snakes of the confine curselves to the snakes of the



single possesses, and that is the pit (Bothros), from which their family takes its mame. This pit may be seen in the side of the muzzle between the nostril and the eye, but a little lower down than either. It is larger and more easily seen than the nostril, which is nearer to the tip of the nose. Hence, to an ordinary observer, these snakes appear to have four nostrils, and no harmless snake has this pit. It is an unfailled size—a trademark of

is an unfailing sign-a trademark of venom, which is never counterfeited. What Snakes Are Venomous. There are other characteristics also, by each one of which the snake may be suspected to belong to this danger-cus family; but not one of these is of

ous family; but not one of these is of itself conclusive.

Now let us suppose we are out in the woolls and suddenly see before us a snake. We are ten feet away from him. He appears to be an inch and a half in diameter and about three feet long. He is coiled up. Let us approach nearer to examine him for we can stand within five feet of his coil without danger. Has he clear ctripes down his back from head to tail? If he has he is harmless. But he has not. Are his scales smooth or rough—i. e. each one with a little ridge or keel in the middle of it? Yes, they are rough—tasny—keeled, as it is called. If his scales were perfectly flat and smooth he would be harmless. Is his head broadened out behind and much bigger than his neck? Yes, his head Is very

broadened out behind and much bigger than his neek? Yes, his head is very broad. This shows that he may be venomous. Is he marked transversely with irregular bands, whole or broken? Yes, he is rather banded. Well, this is also a partial sign of venom. If he were clear black, or bright yellow, or bright green all over, with smooth scales, he would almost certainly he harmless. But he is a dull, subdued color, and his scales are rough. They do not seem polished, witnesses have been undoubtedly mistaken as to the snake they saw bitting, and had before them at the time a rattle-snake or copper-head, which, owing to their confused ideas of snakes, they rashly took to be a hog-nose. This mistake is exceedingly common, so that, in many parts of the country, the bog-nose is actually called copper-head, where true copperheads are not to be met with.

Other Marks of a Bad Snake.

Now, how is a person to know, when he meets with a snake, whether it be venomous or not?

The answer to this question had better not be made so as to apply to the snakes of every country, lest we make the matter confused and difficult two-thirds of his length in an effort to investion of his length in an effort to investigate in the scales are rough. They do not seem polished, but have a velvety appearance. All this simply says that he may be venomous. Let us stoop down to see his eyes clearly. Are they cal-like, with some beginning the properties of the sample sample sample sample subdued color, and his scales are rough. They do not seem polished, but have a velvety appearance. All this simply says that he may be venomous. Let us stoop down to see his eyes clearly. Are they cal-like, with some Does he get ready in his coil to strike, put out his tongue and keep a little turn of his neck just behind the head? He does. Well, venomous snakes generally act so. Let us take a long stick and pake him. There is no danger in doing so, for he cannot jump out of where he is: the most he can do is to throw out one-half or two-thirds of his length in an effort to

a scientific muturalist asserts lings. It too, am often skeptical vant to see for myself. Honce I my snakes in the woods, and in the mane voom with them by int to might that I may know sleeping and waking, as hables dults just as the groom knows steeping and waking, as hables dults just as the groom knows steeping and waking, as hables dults just as the groom knows steeping and waking, as hables dults just as the groom knows steeping and waking, as hables dults just as the groom knows steeping and waking, as hables dults just as the groom knows steeping and waking, as hables dults just as the groom knows steeping and transverse bands or brevents them being formidable, and provided the same woom with them being formidable, and just they are only some succession of a piece of inches-covered bark lying on the ground; at any rate a careless extends over the whole country from the Atlantic to the Pacific, and from the Atlantic to the Pacific, and from the Atlantic to the Pacific, and from the care of the country from the Atlantic to the Pacific, and from the care of the care

From all these marks, he was a copper-head; and it we follow, kill, and examine him, we shall find the tell-take pits in the sides of his mose, so inat, as we have said before, he will seem to have four nostriks. We may raske mistakes in all the other points, but in those pits we can never be deceived. If we take a small kintle-blade and open his mooth, we shall find, just under the pit in the upper law, the long sharp ranges ticely curved and folded back beheath the guns, with venom dripping from their points.

Having now seen all the marks of the big-beaded, rough-skinned, velvet-scaled, cut-eyed, pit-faced Bothrops, let us get a clear notion of how he poisons, and what is to be done to counteract the effects of his venom.

The fangs of the ratiler, copper-head and moccasin are of a sumitar type, being finely pointed, curved needles of chamel, hollowed our with a clear passage through their interfor fram base to point. The nowe of the hypodarmic syrings or morphia injector has been modeled upon them. When the snake bites the velom is squited through the air for a distance of from four to fix fest, and several drops are injected at one ide. If not immediately removed or destroyed by anticide, it is taken up by the circulation, and carried through the system a message of death. If the dose be not sufficient, of course death will not cente but from even one drop the consequences are terrible to think of. Cangrene will supervene in the place of inocculation; or in other words, the other part will rot, and drop out.

the place of inocculation; or in other words, the outen part will rot, and drop out.

Is whisky an antidote? No! You may drink a hogshead of whisky, but you will surely die if the doze of poison has been sufficient. This fact is certain, that whisky will not kill the poison. Neither will tobacco ror gunpowder, nor amnoning, nor olive oil, nor the poiso of application, nor olive oil, nor the poiso of application on matter how popular that remiedy may have become. These have all been tried, but all found wanting in cases of serious smake-bite.

Rut an antidote has been discovered by Dr. Calmette, of the Pasteur institute, at Paris, which is effective without leaving, pain or injury from its use.

Last year he did me the henor of sending me an account of his experiments on smake-venems with a full and complete death of the treatment to be pursued in the case of a human being suffering from the bite of a deadly snake.

Translate from his own words,

"Whatever we may look for in the future from the treatment by inoculation with prepared serum, we can, after the experiments made in the Pasteur institute, safely lay down the following method of treatment to be followed in case of a poisonous serpent

"First-Place if possible, an elastic lignature, moderately compressed, between the place of the bilten member, so as to prevent the absorption of the venom.

"Second—Inject immediately, into the place of the snake have entered,) and round about it for a pretty good distance, twenty to thirty cubic centimetres of a recent solution of chiprige of lime.

"Third—Take off the classification, the manda and bathe the place well with the manda and bathe the place of the limit of the place of the snake have entered,) and round about it for a pretty good distance, twenty to thirty cubic centimetres of a recent solution of chiprige of lime.

"Third—Take off the classification of a posson as the injection has it in and and and bathe the place of the followed in case of a recent solution of chiprige of lime.

the diluted preparation to make the collections of markind in the collections, nourishing fruit, says the N.A. Horteitlurish. And although in the habits and conditions of markind in the collection of food provided by a kind Creater was from will not be in the habits and conditions of markind in the collections, nourishing fruit, says the N.A. Horteitlurish. And sill though in the most initial series of ups and downs. At the most increasing denning of the season it looked a beginning of the season it looked the collection will not be a fine down and of season it looked the series of ups and downs. At the const heateful food. People are being concated more and more as to displace, its assenting of the season it looked the provided food have undergone granting of the season it looked the beginning of the season it looked the proportions. The increasing demand for fruit is encouraging the growing of fruit on a larger scale for most leads the collection of the colleges as shown marked improvement of the colleges and the colleges and the colleges are stated to the colleges are bearing or the season will not be a final the colleges and the colleges are stated to the colleges are bearing or the season will not be a final the college and the colleges are stated to the col

Where there is a garden, large or small, there is a place for fruit trees or beary busiles, which, with a little care will prove a constant source of enjoyment. But where a larger parcel of land is available there the planting of an oreshard is to be urgently recommended. For an ideal orchard, which would give the best kinds and varieties of fruit during the whole searon, and which would supply a large houshold and leave a surplus for friends or for market, we should advice as follows. Of course our selection will have to be modified for extremely cold or warm climate, and can be changed to suit different tastes or wants:

wants:
For an orchard select a soil and situation adapted to the growing of different varieties of fruit for domestic use. For general purposes a light, sandy loam is best, but every soil to be used for fruit or berries should be warm, with natural or under drainage, and must be scale rich with huranted. and must be made rich with barnyard manure or green crops plowed under. The manure must be well rotted and

blotches. His senies are keeled—caspylooking, but velvety. His general appearance, as he is colled, reminds one
of a piece of lichen-covered rock, or a
piece of moss-sovered bark [ying on
the ground; at any rate a careless
sey would take him for some such
object. His eyes are cat-like, with
a little black sitt for a sight. His
general hie is a sort of chocolate
brown, When he goes away he does
not disappear like a flash, but just
gildes gracefully off, as if not in
the sides gracefully off, as if not in
great a hurry.

A Look at the Fangs.

From all these marks, he was a copperhead; and if we follow, sill, and examinahim, we shall find the tell-take pits in
the sides of his nose, so inat, as we baye
not the long, silm prake mistakes in all
the other points, but in these pits we can
never be deserved. If we take a small
ked black can open his mouth, we shall
ked black and open his mouth, we shall
ked black and open his mouth, we shall
ked black be really the upper jaw,
the long, silm pre the pit in the upper jaw,
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By building up Utah Industries you build up Utah. Use High Grade Three Crown Baking Powder.

WHERE THE VANDERBILT MONEY WILL GO.

The Duke of Marlborough's old family solicitor sailed for America the lly solicitor salled for America the other day to assist in drawing up his marriage settlements. A great bustle of preparation has begun at Bienheim, among other things the huge pleasure lakes of the demesne being dredged and cleaned, a work which cost \$30,000, and which owing to the chronic state of this particular ducal purse, was not done before for ninety years.—From a foreign letter in the New York Times.

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Those who have used Dr King's New Discovery know its value, and those who have not have now the opportunity to try it Free. Call on the advertised Druggist and get a trial bottle, free. Send your name and address to H. E. Bucklen & Co., Chleago, and get a sample box of Dr. King's New Life Pills Free, as well as a copy of Guide to Health and Household Instructor, Free. All of which is guaranteed to do you good and cost you nothing. Z. C. M. I. Drug dept.

Grade Three Crown Baking Powder will be sent to every house in the city. Kindly give it a trial, and if caual to the best imported we know you will give the home-made goods the preference.

Grade Three Crown Baking Powder will be himd interference and in keeping an eye on the ball he is easily his equal. Captain Brewer is 21 years old, weighs 163 pounds and is 5 feet 11½ inches in height. He is a member of the Institute of 1770, the Alpha Delta

## A POOR LOT.

Phi and other clubs. His strength re-cord, acording to the gymnasium tests of Dr. Sargent, is \$55.7, making him the nineteenth strongest man may in college.

shape and the work of the team is progressing nicely.

Three candidates who stand a good chance as guards are Riggs, Rhodes and Wentz Biggs experience fast

great scarcity of coaches. W. H. Lewis, with Captain Brower, has been the only one in regular attendance. Billy Brooks is so busy with his med-

AFFECTED FOOTBALL.

Another Good Man.

With Cabot at left the Crimsons have another strong man. Unless Norton Shaw gots into shape there Best Men-Yale's Team Only Fair-Princeton's Tigers Above the Average.

The 'Varsity football season is now in full swing, but rather strangely, now of the of the control of the control

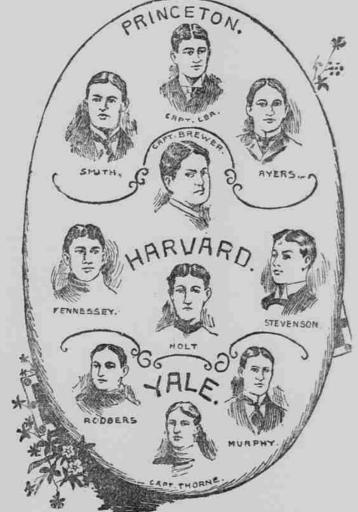
## ELECTRICAL NOTES.

The following comparison, due to Pacandescent light, 14; kernsene, argand burner, 231; gas, argand burner, 280 candle, 473; gas, butteefly hurner, 111. The heat question is a very important one, but it is as nothing compared with the question of vitlated atmosphere. In pares still more favorably with all other

parces of arthficial light.

In a paper read before the Royal Society On the effect of pressure of the surrounding gas on the temperature of the crater of an electric arc light. Mr. W. E. Wilson states that of fate years it has often been assumed that the temperature of the crater forming the positive pole of the cleetric arc is that of bolling carbon. The most modern determinations give that point as shout 1,300 degrees to 1500 degrees C. In order to investigate whether increased pressure in the gas surrounding the electric arc would raise the temperature of the crater, be used a strong cast-iron box, in the interior of which an electric arc light could be matutained. By increasing the pressure of the gas in the box he temperature of the crater is considerably lowered instead of being raised, and the experiments seem to show that the temperature of the crater is considerably lowered instead of being raised, and the experiments of the grater. But that of a finament in an incandescent bump, depends on how much it is cooled by the strong of the grater in the strater, from the way in which the carbon of incandescent imp finaments is transferred to the glass. The pressure of the vapor of carbon in the arc may consequently be very small, and further it would seem that the supposition is not borne out by these experiments, and thus carbon may exist there in the solid form at very small, and further it would seem that the supposition is not borne out by these experiments, and thus carbon may exist there in the solid form at very small, and further it would seem that the supposition is not borne out by the garmatures vary from a length equal to one half the diameter to a length equal to one half the diameter to a length equal to one half the diameter to a length equal to one half the diameter to a length equal to two diameters. It is common to make the length equal to the diameters and sometimes three drameters. It is common to find the length equal to twe diameters to a length equal to two diameters.

Gutta percha heated in hot water at about 100 degree F becomes plastic, and will take a fine invession with elight oressure. When gutta percha is scaled for a few hours in benzole or naphtha, it becomes zwellen, and if it is then dipoded in hot water, it becomes zo chastle



THE BEST OF THE KICKERS.

bold his own with any man in the country.

Good Man for the Place.

In his preparatory days he made reditable records in successful to get out very often. Jim Lee was on the field once or twice during the has not indulged in since entering has not indulged in since entering has not indulged in since entering share the consultations. The hatter branch of athletics, however, he has not indulged in since entering share the consultations. The hatter branch of athletics, however, he has not indulged in since entering share the consultations. The hatter branch of athletics, however, he has not indulged in since entering share the consultations. The hatter branch of athletics, however, he has not indulged in since entering share the consultations. The hatter branch of a share the consultations of the share largely due to the excellent coaching of Laurie Bliss and ex-Captain Frank Hinkey. Captain Thorne is a levelhed of the Varsity and played in the Pennsylvania game. This year also he rowed No. 4 in his class crew, which won the class championship, besides pulling away from the Varsity crew so had the consultation of the Blues has been accessed by the consultation of the Blues has been accessed by the consultation of the Blues has been accessed by the consultation of the Blues has been accessed by the consultation of the Blues has been accessed by the consultation of the Blues has been accessed by the consultation of the Blues has been accessed by the consultation of the Blues has been accessed by the consultation of the Blues has been accessed by the consultation of the Blues has been accessed by the consultation of the Blues has been accessed by the consultation of the Blues has been accessed by the consultation of the Blues has been accessed by the consultation of the same place and canniform added man with a goodly stock of experimental purposes which was salisfactory, cannot be the most place of the maniferial throughout the season was of the most bright has been accessed by the consultation of the same place and